STEREO INTEGRATED AMPLIFIER

A-45/65

SERVICE MANUAL

KENWOOD

717650-51

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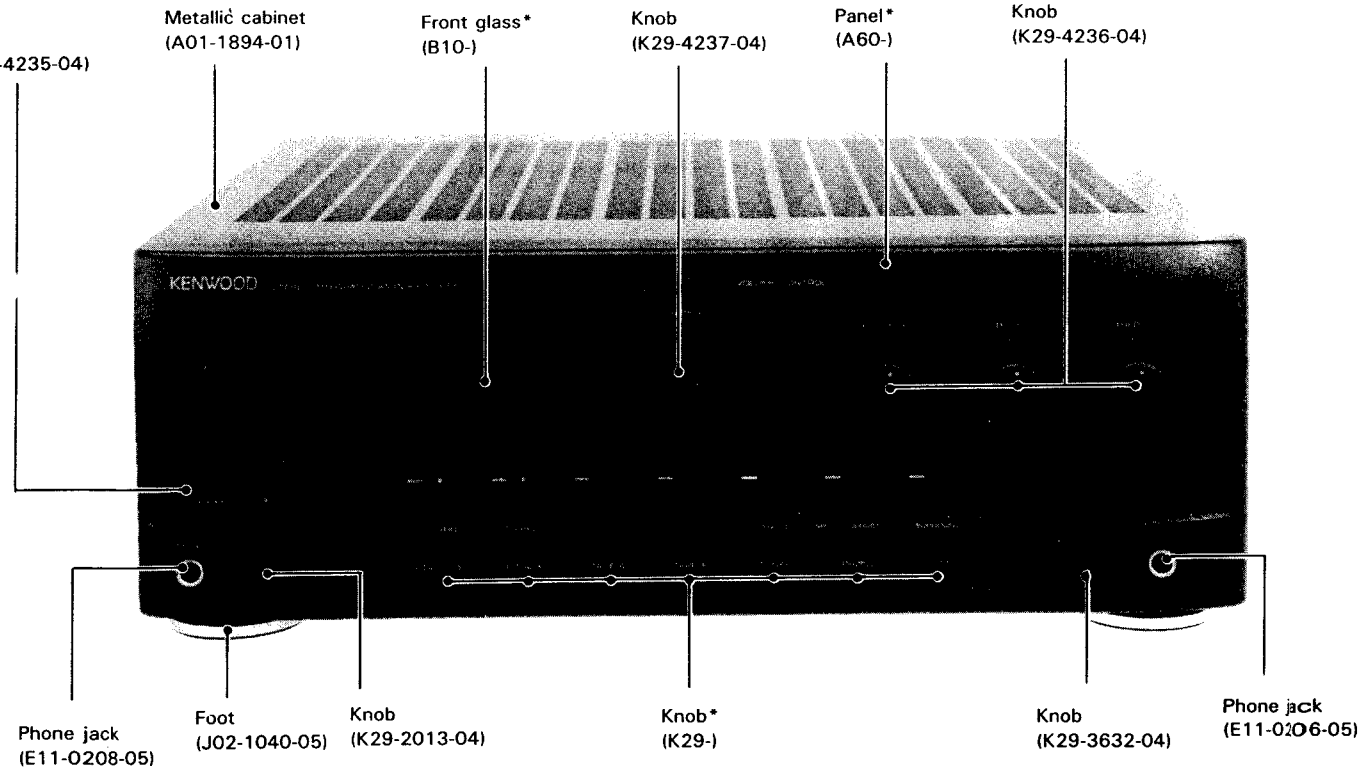
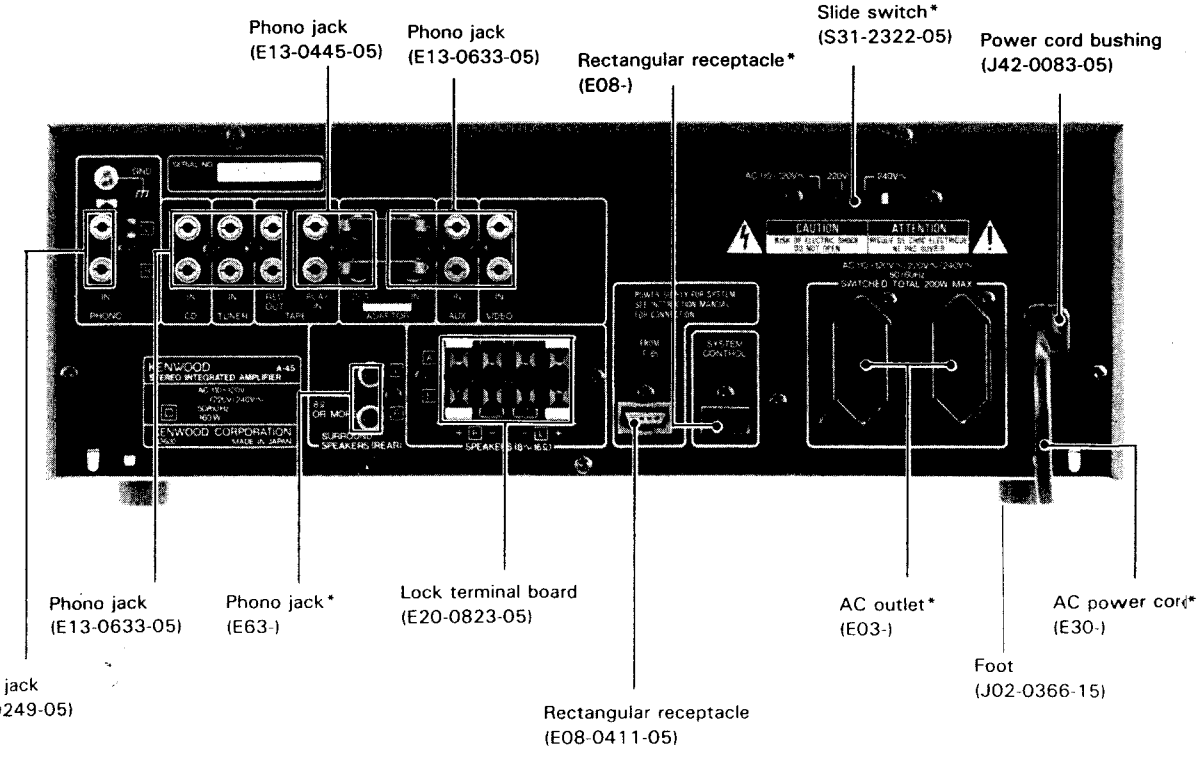
B51-4344-00(S)1991

[A-45]





*Refer to parts list on page 19.

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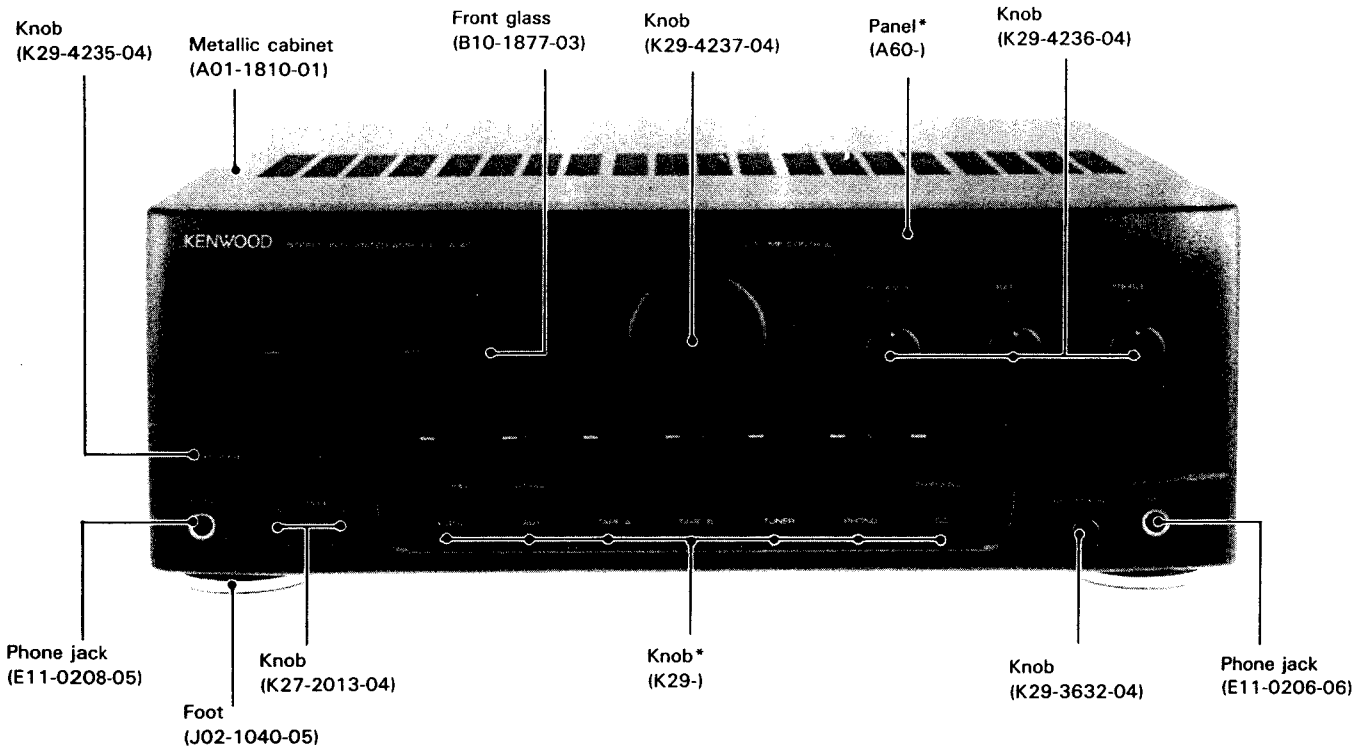
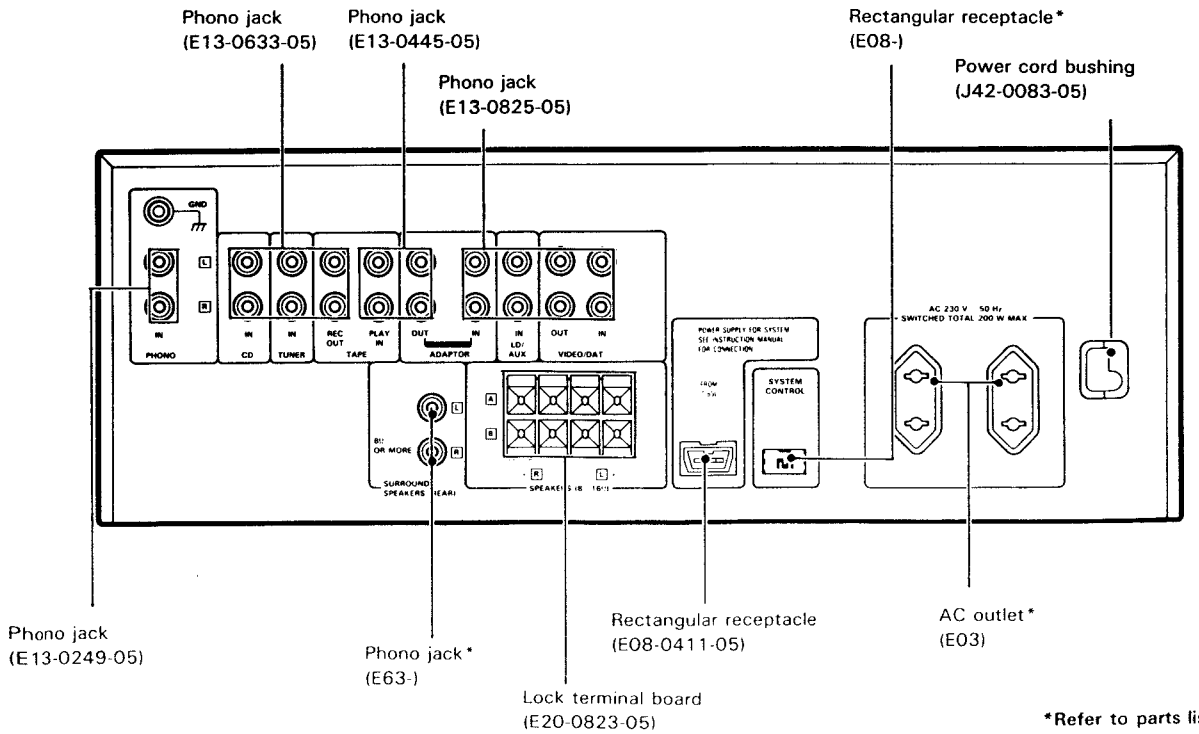




*Refer to parts list on page 19.

CIRCUIT DESCRIPTION

MICROPROCESSOR μPD75104CW-251

1. OPERATION DESCRIPTION

1.1 Functions

(1) Features

- CD DIRECT
- SURROUND
- CD REC
- HIT MASTER
- MELODY ASSIST
- Video input: Two channels, Audio input: Seven channels
- Remote control compatible
- Serial input/output (16 bits)

(2) Control IC

TC9163N

1.2 Destination and Model

The software is common in all models and all destinations.

1.3 Key Descriptions

- POWER
  System ON/OFF key. "0800H" is output when this key is set to ON. A sound is generated after muting for 4 seconds. "0801H" is output when this key is set to OFF. The POWER pin is set low after 800 ms. This key is ineffective for 500 ms when it is pressed.
- TAPE A
  TAPE A select key. Sets the selector to TAPE A and mutes for 32 ms + 500 ms. Ineffective during REC.
- VIDEO
  VIDEO select key. Sets the selector (VIDEO/AUDIO) to VIDEO and mutes for 32 ms + 500 ms. Ineffective during REC.
- PHONO
  PHONO select key. Sets the selector to PHONO and mutes for 32 ms + 500 ms. Ineffective during REC.
- CD
  CD select key. Sets the selector to CD and mutes for 32 ms + 500 ms. Ineffective during REC.
- TAPE B
  TAPE B select key. Sets the selector to TAPE B and mutes for 32 ms + 500 ms. Ineffective during REC.
- AUX
  AUX select key. Sets the selector to AUX and mutes for 32 ms + 500 ms. Ineffective during REC.
- TUNER
  TUNER select key. Sets the selector to TUNER and mutes for 32 ms + 500 ms. Ineffective during REC.
- SURROUND
  Surround ON/OFF key. Mutes for 32 ms + 500 ms during selection.
- MUTE
  Mute ON/OFF key.
- CD DIRECT
  CD DIRECT ON/OFF key. Mutes for 32 ms + 5 ms during selection.
- CD REC
  CD REC ON/OFF key. Mutes for 32 ms + 5 ms during selection. Ineffectives during REC. A selector is released when the REC mode is entered with this key set to ON.
- MELODY ASSIST
  MELODY ASSIST ON/OFF key. Mutes for 32 ms + 500 ms during selection. Ineffective during REC.
- HIT MASTER
  HIT MASTER ON/OFF key. Mutes for 32 ms + 500 ms during selection. Ineffective during REC.

1.4 Operation

(1) The MELODY ASSIST and HIT MASTER keys are not set to ON at the same time.
(2) The MELODY ASSIST and HIT MASTER keys are set to OFF when AI AUTO and AI FOCUS are started.
(3) A selector is locked during REC when the CD REC key is set to OFF. It is released when the CD REC key is set to ON. The key is then fixed to ON.
(4) Keys other than POWER are ineffective during protection.
(5) The CD DIRECT and SURROUND keys are not set to ON at the same time.
(6) The CD DIRECT key is set to OFF when set to selectors other than CD while it is on.

1.6 Initial Setting

POSITION	TUNER
CD DIRECT	OFF
SURROUND	OFF
CD REC	OFF
MELODY ASSIST	OFF
HIT MASTER	OFF
Video POSITION	VIDEO

1.7 Test Mode

(1) Setting

Insert an AC plug while pressing the CD key.

(2) Contents

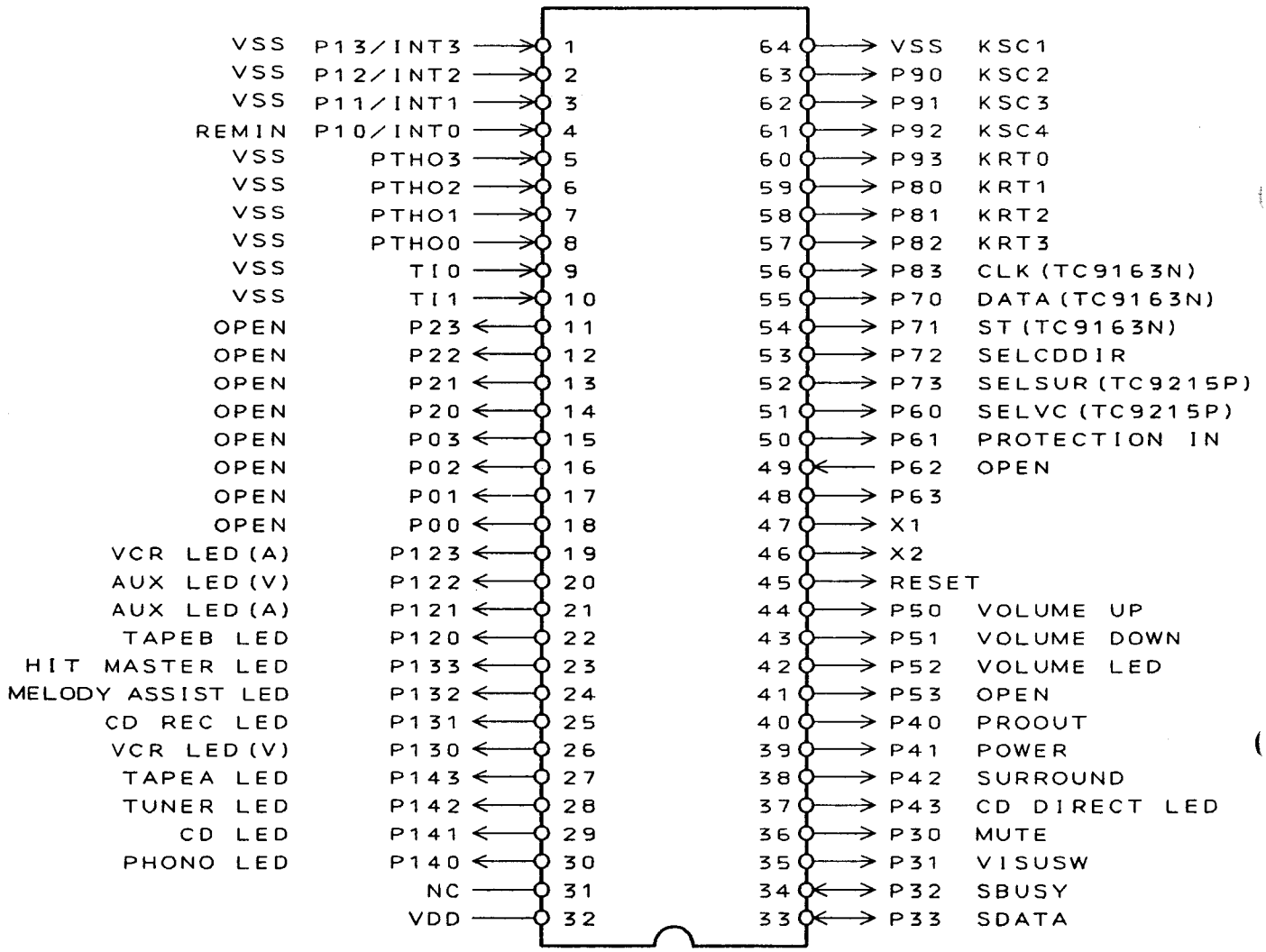
PHONO key	Volume control increased
CD key	Volume control decreased

(3) Initializing

Pull out the AC plug.

CIRCUIT DESCRIPTION

2.1 Pin Connection



CIRCUIT DESCRIPTION

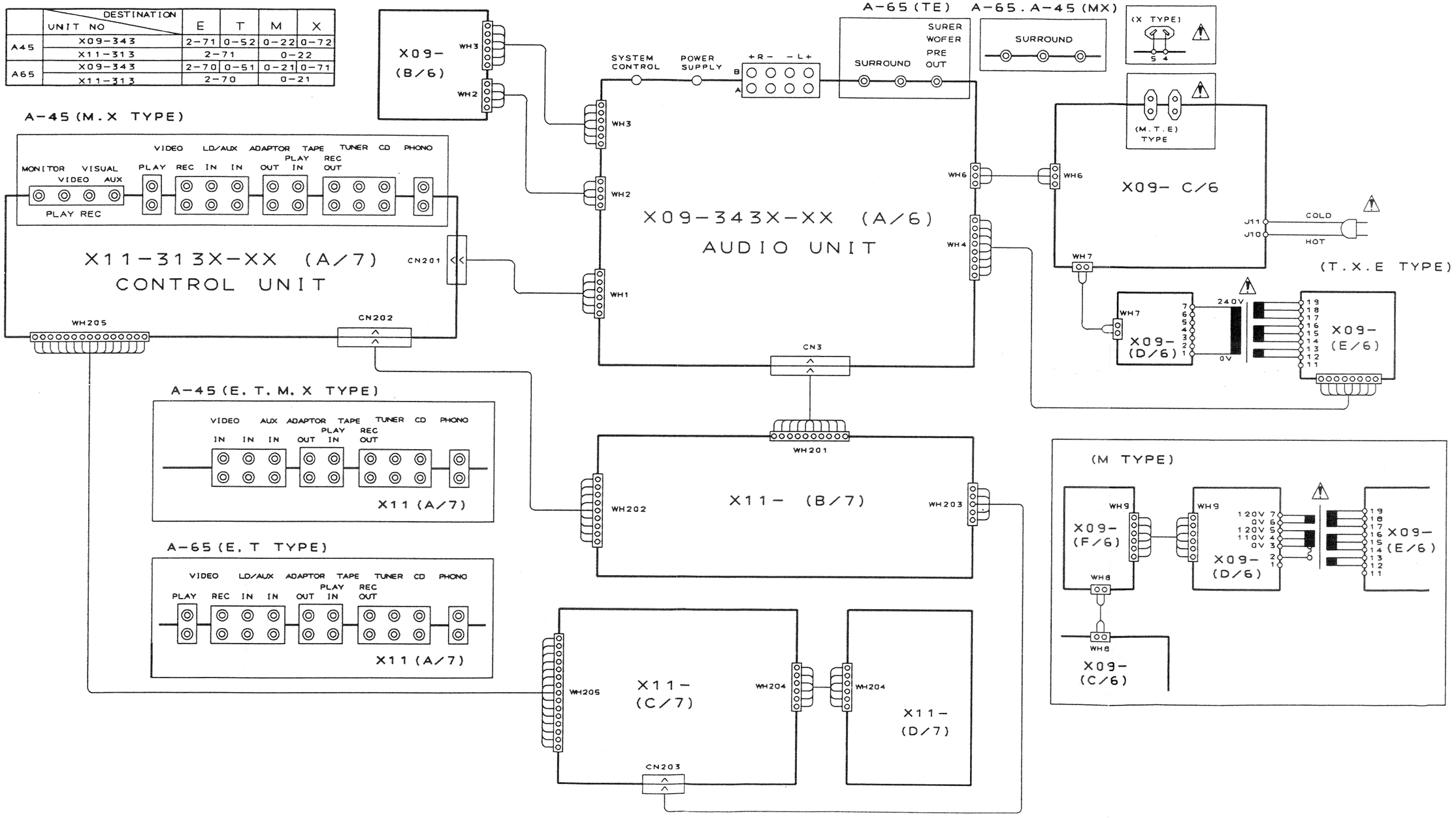
2.2 Pin Functions

Pin No.	Pin name	I/O	Name	Description
1	P13/INT3			Connected to Vss
2	P12/INT2			Connected to Vss
3	P11/INT1			Connected to Vss
4	P10/INT0	I	REMIN	Remote control input
5	PTH03			Connected to Vss or VDD
6	PTH02			Connected to Vss or VDD
7	PTH01			Connected to Vss or VDD
8	PTH00			Connected to Vss or VDD
9	T10			Connected to Vss or VDD
10	T11			Connected to Vss or VDD
11	P23	O		OPEN
12	P22	O		OPEN
13	P21	O		OPEN
14	P20	O		OPEN
15	P03	O		OPEN
16	P02	O		OPEN
17	P01	O		OPEN
18	P00	O		OPEN
19	P123	O		VCR LED (AUDIO) ON. L
20	P122	O		AUX LED (VIDEO) ON. L
21	P121	O		AUX LED (AUDIO) ON. L
22	P210	O		TAPEB LED ON. L
23	P133	O		HIT MASTER LED ON. L
24	P132	O		MELODY ASSIST LED ON. L
25	P131	O		CD REC LED ON. L
26	P130	O		VCR LED (VIDEO) ON. L
27	P143	O		TAPEA LED ON. L
28	P142	O		TUNER LED ON. L
29	P141	O		CD LED ON. L
30	P140	O		PHONO LED ON. L
31	NC			
32	VDD			
33	P33	I/O	SDATA	Serial data
34	P32	I/O	SBUSY	Serial busy
35	P31	O	VISUSW	Video selection switch ON. H

CIRCUIT DESCRIPTION

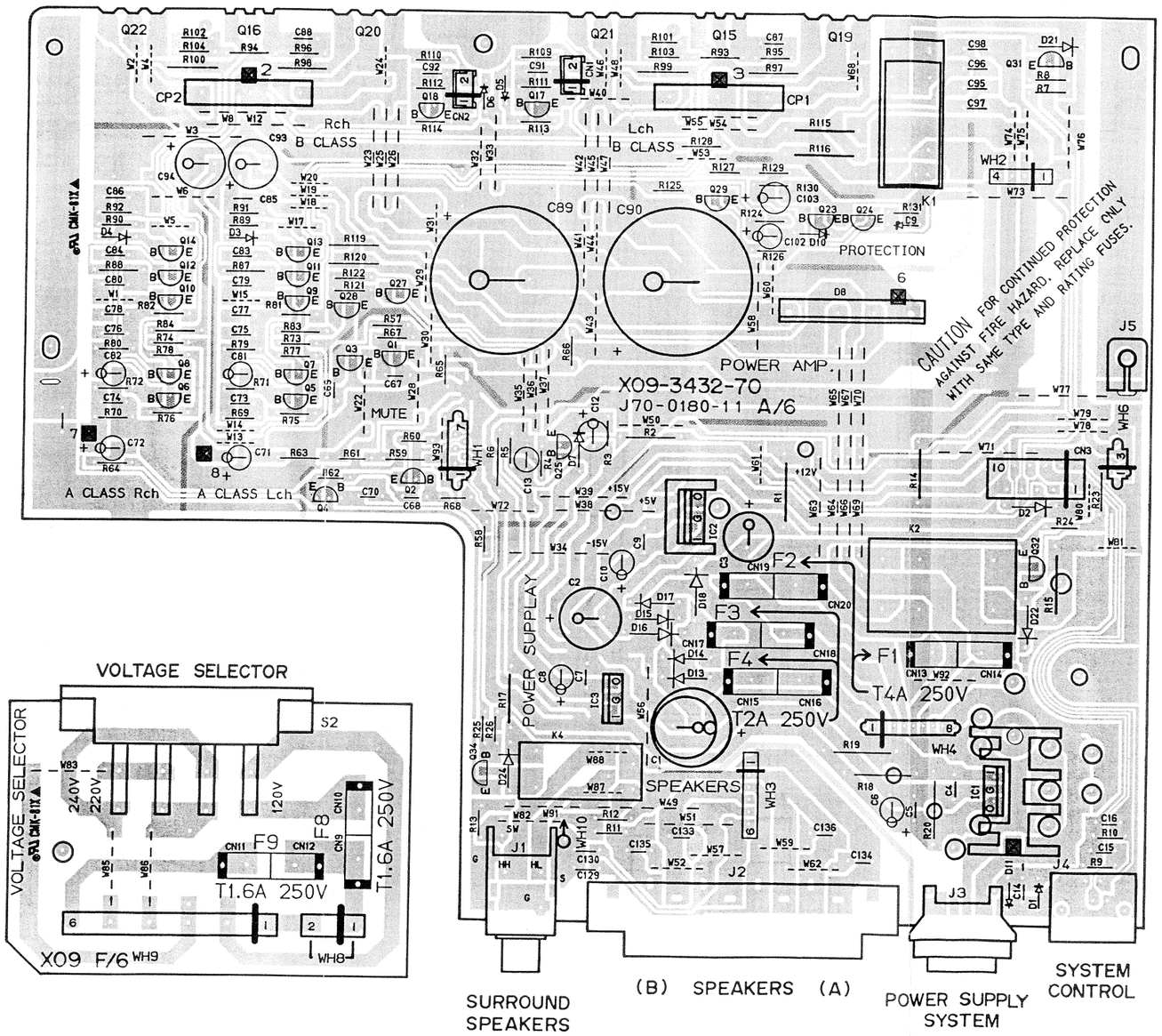
Pin No.	Pin name	I/O	Name	Description	
36	P30	O	$\overline{\text{MUTE}}$	Mute control	ON. L
37	P43	O	LCDDIR	CD DIRECT LED	ON. H
38	P42	O	LSUR	SURROUND LED	ON. H
39	P41	O	POWER	Power port	ON. H
40	P40	O	PROOUT	Speaker relay	ON. H
41	P53	O		OPEN	
42	P52	O	VOLLED	Volume control LED	ON. H
43	P51	O	VOLDN	Volume DOWN	ON. H
44	P50	O	VOLUP	Volume UP	ON. H
45	RES				
46	X2			Oscillator	
47	X1				
48	P63	O		OPEN	
49	P62	I	PROIN1	Protection input	
50	P61	O	SELVC	Voice changer selection	ON. H
51	P60	O	SELSUR	Surround selection	ON. H
52	P73	O	SELCDDIR	CD DIRECT SW	ON. H
53	P72	O	SELST	STROBE pin for TC9163N	
54	P71	O	SELDT	DATA pin for TC9163N	
55	P70	O	SELCLK	CLK pin for TC9163N	
56	P83	I	KRT3	Key return 3	
57	P82	I	KRT2	Key return 2	
58	P81	I	KRT1	Key return 1	
59	P80	I	KRT0	Key return 0	
60	P93	O	KSC4	Key scan 4	
61	P92	O	KSC3	Key scan 3	
62	P91	O	KSC2	Key scan 2	
63	P90	O	KSC1	Key scan 1	
64	VSS				

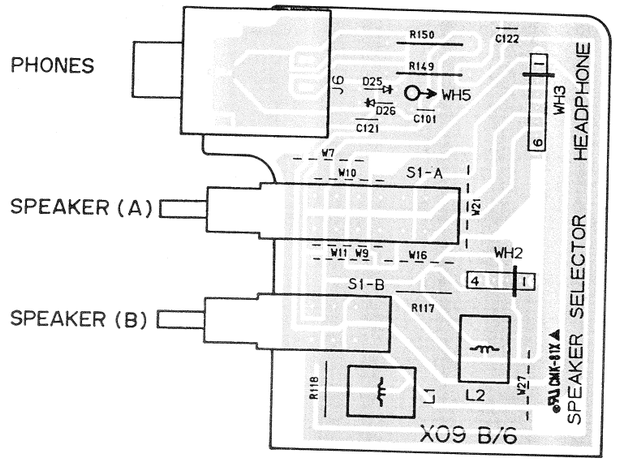
	DESTINATION / UNIT NO	E	T	M	X
A45	X09-343	2-71	0-52	0-22	0-72
	X11-313	2-71		0-22	
A65	X09-343	2-70	0-51	0-21	0-71
	X11-313	2-70		0-21	

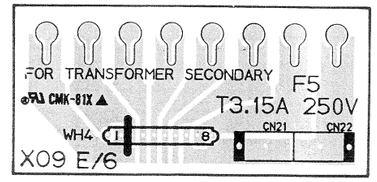


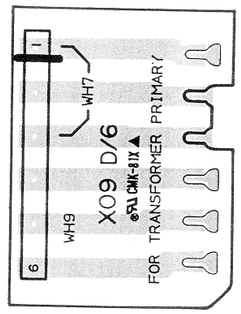
PC BOARD (Component side view)

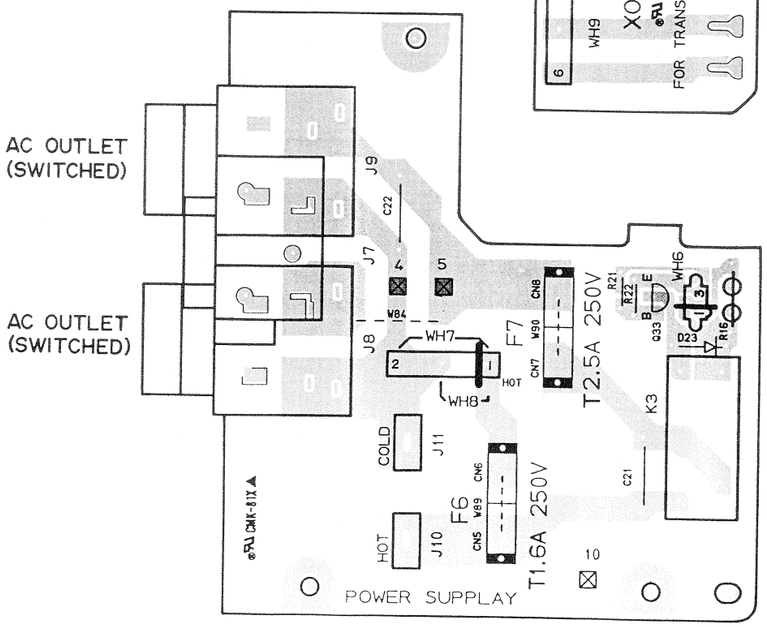
AUDIO UNIT





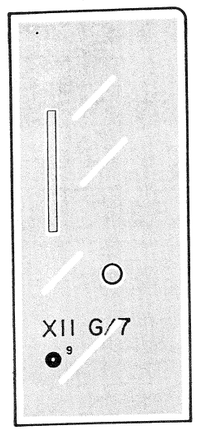


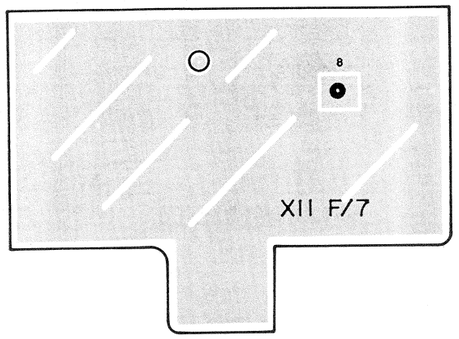


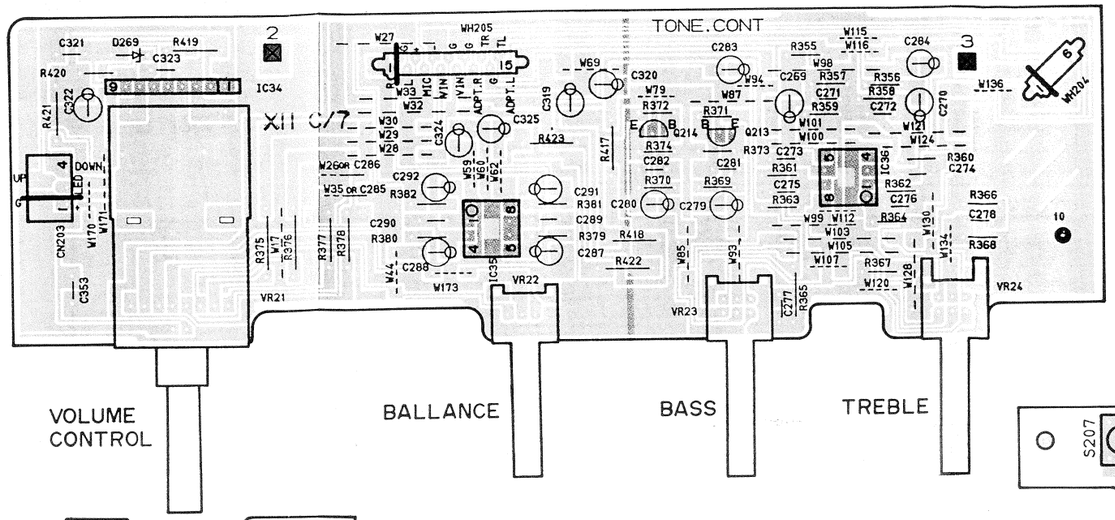


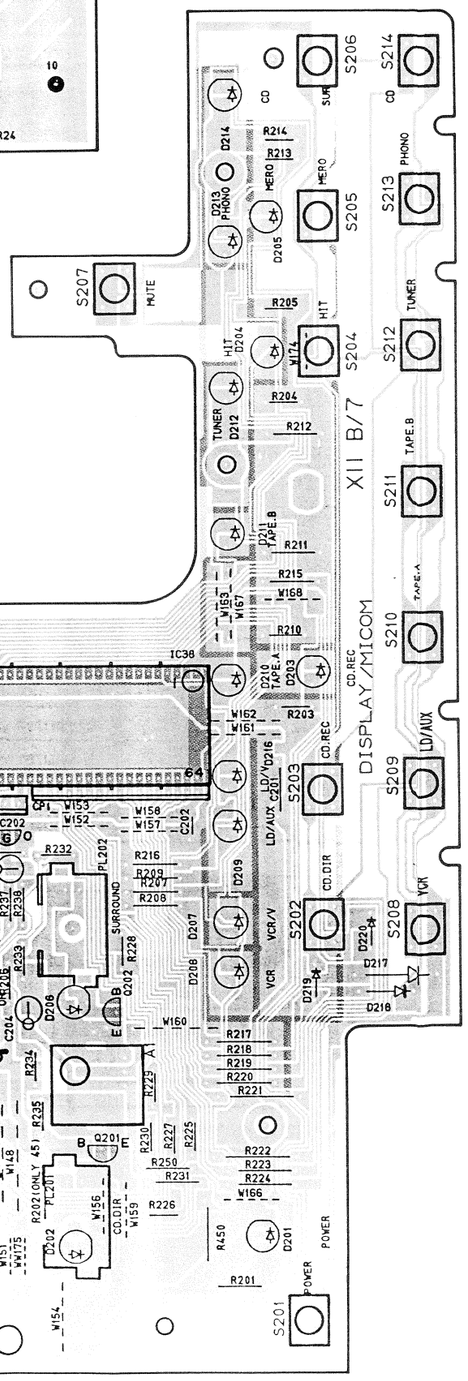
PC BOARD (Component side view)

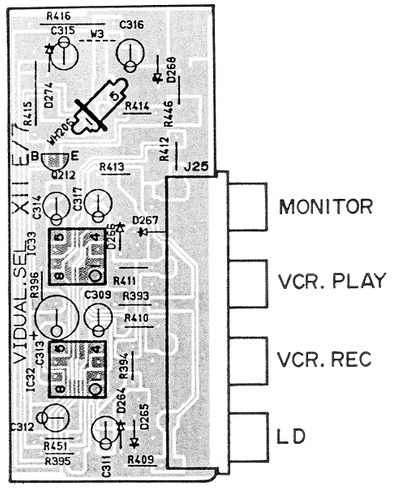
CONTROL UNIT

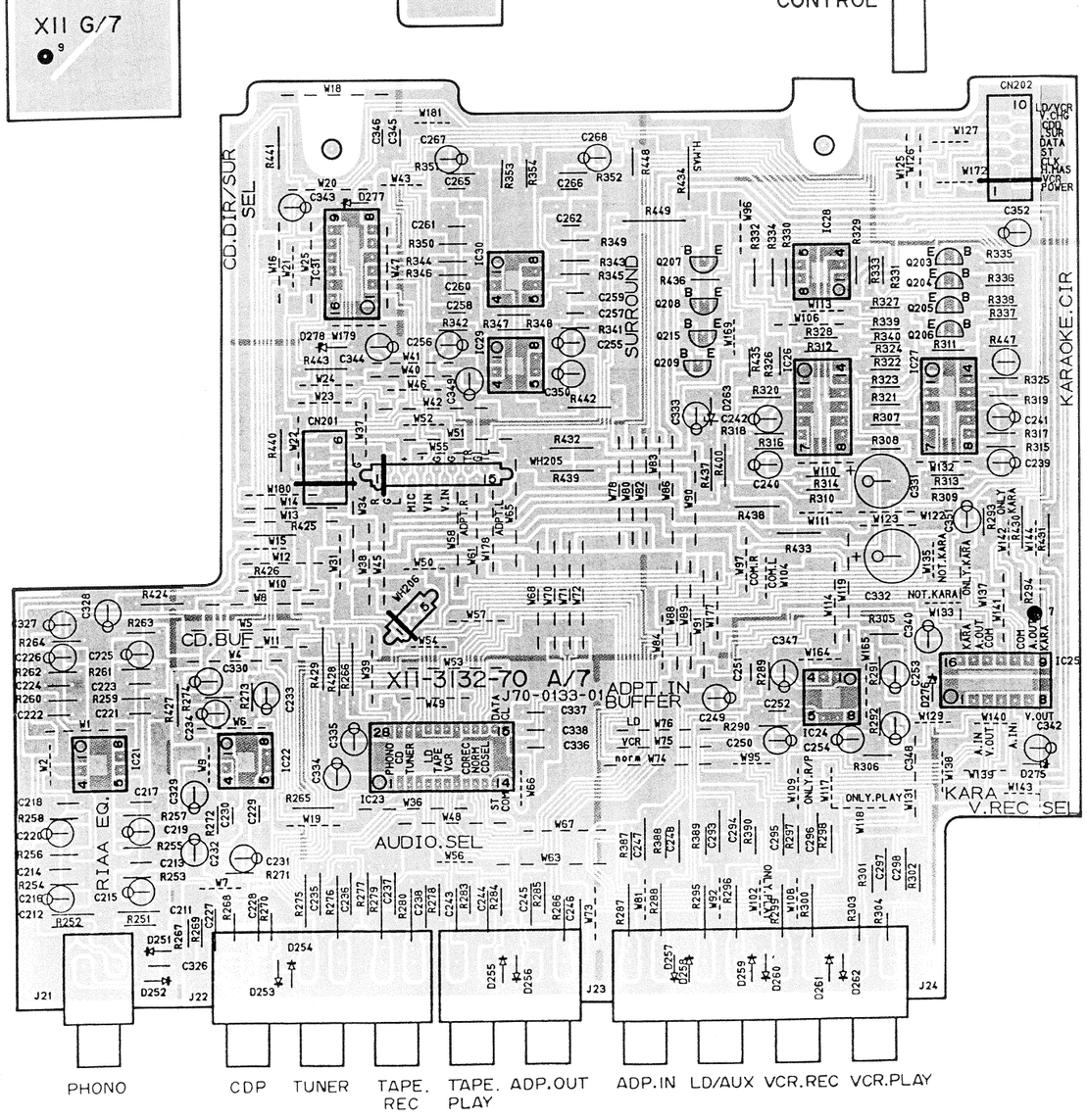


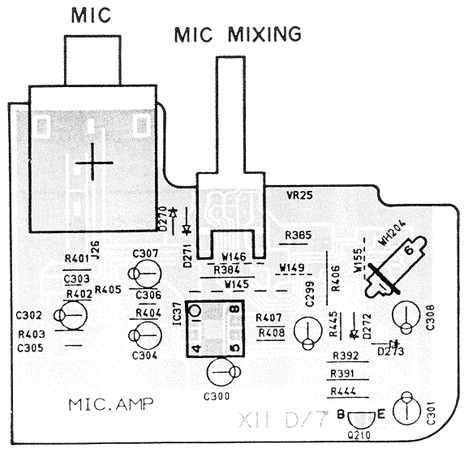












(X11-313X-XX) (A/7) JAPAN MADE (X11-314X-XX) (A/7) SINGAPORE MADE

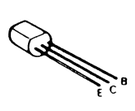
(X11-) (B/7)

(X11-) (C/7)

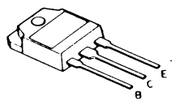
(X11-313X-

X09-344X-

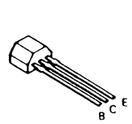
X11-313X-XX																								
	COUNTRY	ABB	UNIT NAME / ANGF.NO	A	B	C	IC25	Q202	D202	D206	D204,205 207,216	PL201,202	D273	C285,286	C299,308	R204,205 207,215	R206,232 233	R406~408 445,591	S204~206	W105,116 117	W102,118 156	W135,135 174	W137,142	W26,35	J24
A-45	ENGLAMD	T	X11-3132-71	NO	NO	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	YES	6P
	EUROPE	E																						NO	
	AUSTRALIA	X	X11-3130-22		YES		YES	YES		YES				0.12μF			YES								
	GENERAL MARKET	M																							
A-65	ENGLAMD	T	X11-3132-70	NO	YES	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO	YES	8P
	EUROPE	E									YES		YES	0.1μF	YES	YES		YES	YES						
	AUSTRALIA	X	X11-3130-21	YES		YES																			
	GENERAL MARKET	M																							



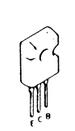
2SA992
2SC1845
2SC2003
2SC2878



2SB1476
2SD2231



DTC124ES
2SA933S
2SC1740S



2SC4137

(X11-313X-XX)

IC21.22.24 28.30.35~37	:NJM4565D-D
IC23	:TC9163N
IC25.31	:TC9215P
IC26.27	:NJM2058D
IC32	:LVA522D
IC33	:MC14576AP
IC34	:TA8409S
IC38	:μPD75104CW-251
IC202	:PST529D orDTC124ES
Q212.215	:UN4212
Q201.202	:2SC2003(L.K)
Q203~206 208.210	:C3111A(Q.R) orC1740S(Q.R)
Q207.209	:A1309A(Q.R) orA933S(Q.R)

D217~224 226.227.	:1SS133 orHSS104
251~262.264~267 270.271.273	
D263.272	:RD4.7ES(B2) orHZS4.7N(B2)
D268.274	:RD6.8ES(B2) orHZS6.8N(B2)
D269	:RD3.9ES(B2) orHZS3.9N(B2)
D275~D278	:RD11ES(B2) orHZS11N(B2)

(X09-343X-XX)

IC1	:μPC7815HF
IC2	:μPC7915HF
IC3	:μPC7805HF
Q1~4	:2SCC2878(B)
Q5~8.13.14	:2SA992(F.E)
Q9~12.13.14	:2SC1845(F.E)
Q15.16	:2SC4137(V.W)
Q27	:UN4212 orDTC124ES
Q28.29	:2SC933S(Q.R)
Q23.24	:2SC2003(L.K)
Q31~34.	:2SC2003(L.K)
D1~7.10.11 25.26	:1SS131 orHSS104A
D8	:DS5BA20F03
D9.263.272	:RD4.7ES(B2) orHZS4.7N(B2)
D13~18 21~24	:SS6688

(X09-343X-XX) (A/6) JAPAN MADE
(X09-344X-XX) (A/6) SINGAPORE MADE

(X11-313X-XX) (D/7)

(M) TYPE

(X09-) (T, X, E) TYPE

X09-344X-XX

	COUNTRY	ABB.	UNIT NAME \ AREP.NO	D	F6.WH3 W89.W90	Q21.22	Q19.20	C1	C89.90	R11~13	R18.19	R20	R79.80	R109.110	F1.2	F3.4	F6	F7	F8.9	W49.82.91	W87.88	J1	J8.9	4.5	WH10
A-45	ENGLAND	T	X09-3440-52	NO	NO	81476#5	D2231#5	1000μ63	50V560μ	NO	270	NO	1.1K	5.6K	T3.15A	T2A	T1.25A	T2.5A	NO	NO	NO	NO	YES	NO	YES
	EUROPE	E	X09-3442-71											3.3K							YES	E63-0027	NO	YES	
	AUSTRALIA	X	X09-3440-72														W89	W90	T1.25A				YES	NO	
	GENERAL MARKET	M	X09-3440-22		YES																				
A-65	ENGLAND	T	X09-3440-51	NO	NO	81492#5	D2254#5	2200μ63	63V6800μ	NO	270	NO	910	2.7K	T4A	T4A	T1.6A	T2.5A	NO	NO	YES	E63-0018	YES	NO	NO
	EUROPE	E	X09-3442-70							YES	180	270		3.6K						YES	NO	E63-0027	NO	YES	
	AUSTRALIA	X	X09-3440-71	YES																			YES	NO	
	GENERAL MARKET	M	X09-3440-21		YES												W89	W90	T1.6A						

SIGNAL LINE
GND LINE
+B
-B

2SC4137

2SB1492
2SD2254

UN4212
2SA1309A
2SC3311A

MC14576AP
NJM4565D-D

NJM2058D

TC9215P

EXPLODED VIEW

A	M3 x 12 (Hex - Tap)	:	N09 - 0333 - 05
B	M3 x 8	:	N09 - 1445 - 05
C	M3 x 8 R Tight	:	N09 - 1473 - 05
D	M3 x 6	:	N30 - 3006 - 46
E	M3 x 8	:	N35 - 3008 - 46
F	M3 x 6 (Br - Tap)	:	N87 - 3006 - 46
G	M2.6x8 (Bi - Tap)	:	N89 - 2608 - 46
J	M3 x 8 (Bi - Tap) BLK	:	N89 - 3008 - 45
K	M3 x 8 (Bi - Tap)	:	N89 - 3008 - 46
L	M4 x 8 (Bi - Tap) BLK	:	N89 - 4008 - 45

Parts with the exploded numbers larger than 700 are not supplied.